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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/716,785

11/19/2003

Wu-Song Huang

FIS920030377US1

6138

32074

7590

09/28/2006

EXAMINER

LEE, SIN J

INTERNATIONAL BUSINESS MACHINES CORPORATION  
DEPT. 18G  
BLDG. 300-482  
2070 ROUTE 52  
HOPEWELL JUNCTION, NY 12533

ART UNIT

PAPER NUMBER

1752

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Advisory Action</b> <b>Before the Filing of an Appeal Brief</b>	<b>Application No.</b> 10/716,785	<b>Applicant(s)</b> HUANG ET AL.	
	<b>Examiner</b> Sin J. Lee	<b>Art Unit</b> 1752	

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 18 September 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
 b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
 (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
 (b) ☐ They raise the issue of new matter (see NOTE below);  
 (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
 (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

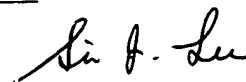
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
 5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
 6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
 7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
 The status of the claim(s) is (or will be) as follows:  
 Claim(s) allowed: \_\_\_\_\_.  
 Claim(s) objected to: 12, 13, 25 and 26.  
 Claim(s) rejected: 1, 2, 5, 7-16, 19 and 21-30.  
 Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
 9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
 10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See attachment.  
 12. ☒ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). 09182006  
 13. ☐ Other: \_\_\_\_\_.

  
 Sin J. Lee  
 Primary Examiner  
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### ***Claim Objections***

1. Claims 12, 13, 25 and 26 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Present claims 1 and 14 are written so that the pendant solubility-promoting moiety (which is a fluoroalcohol, a carboxylic acid, an amino group, an imino group, a fluorinated imino group or a fluorinated amino group) is protected with the cyclic ketal acid labile moiety. However, in those claims 12, 13, 25 and 26, free solubility-promoting group (which is not protected with the cyclic ketal acid labile moiety) has to be present (as R<sup>6</sup>) *whereas in present claims 1 and 14, all of the solubility-promoting moiety has to be protected with the cyclic ketal acid labile moiety*. Thus, claims 12, 13, 25 and 26 fail to further limit the subject matter of claims 1 and 14.

### ***Claim Rejections - 35 USC § 103***

2. Present claims 1, 2, 5, 7-16, 19, 21-27 and 30 stand as rejected under 35 U.S.C. 103(a) over Sooriyakumaran et al'520 in view of Asakawa et al'699 and Bucchignano et al'097, as addressed in Paragraph 4 of Final Office action. Present claims 28 and 29 stand as rejected under 35 U.S.C. 103(a) over Sooriyakumaran et al'520 in view of Asakawa et al'699 and Bucchignano et al'097 and further in view of Khojasteh et al'204, as addressed in Paragraph 5 of Final Office action.

### ***Response to Arguments***

3. Applicants argue that Asakawa et al fails to teach equivalency of ethers with ketals. However, as previously addressed, Asakawa does teach the equivalence of 1-methoxycyclohexyl ether group and trimethylsilyl ether group as acid-decomposable groups, and *the 1-methoxycyclohexyl ether is a ketal*. Based on Asakawa's teaching in view of Bucchignano, which teaches the advantage of using a cyclic aliphatic ketal substituent such as a methoxycyclohexanyl group as an acid labile group, it is still the Examiner's position that it would have been obvious to one skilled in the art to use the methoxycyclohexanyl group as Sooriyakumaran's acid-cleavable group (in lieu of the trimethylsilyl group) in his Example 3 in order to obtain a chemically amplified resist that provides improved resist coating shelf life and with little or no vacuum effects on use and that prevents air-borne contaminants from adversely affecting the chemical nature of the aqueous base soluble copolymer. Although applicants point out the difference between acetal, ketal and orthoesters in present specification, there is no evidence on the record that shows unexpectedly superior results of present invention over that of the closest prior art (also, it is to be noted that although applicants point out that linear ketal protecting groups have disadvantages of having short shelf life (when compared to that of present cyclic ketal protecting group), Bucchignano *already teaches* that by using cyclic ketal group such as methoxycyclohexanyl group, one can provide improved resist coating shelf life). Applicants argue (referring to Schmaljohann et al) that synthesizing cyclic ketal protecting groups on larger solubility promoting moieties in Sooriyakumaran et al is not predictable since the structure of Bucchignano et al is different than that of Sooriyakumaran and will not necessarily result in the desired resist composition. Thus,

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applicants argue that there was no reasonable expectation of success to combine the teachings or suggestions of Sooriyakumaran et al, Asakawa et al, and Bucchignano et al to arrive at the present invention. Applicants' such arguments would have been more persuasive if it was not for the fact that Sooriyakumaran et al itself includes 1-methoxycyclohexyl group as one of examples of suitable acid-decomposable group for his invention (see [0050]). Since Sooriyakumaran itself teaches that 1-methoxycyclohexyl group can be used as an acid-decomposable group, it is the Examiner's position that one skilled in the art would have reasonable expectation of success to combine the teachings of Sooriyakumaran, Asakawa and Bucchignano to arrive at the present invention.

For the reasons stated above, present rejections still stand.

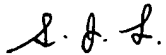
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

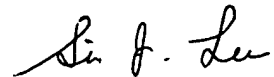
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee  
September 26, 2006



**SIN LEE**  
**PRIMARY EXAMINER**